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09/617,837	07/17/2000	Toshiki Sugawara	501.38634CX1	7281

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EXAMINER

YAO, KWANG BIN

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/617,837

Applicant(s)

SUGAWARA ET AL.

Examiner

Kwang B. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-38 is/are pending in the application.
- 4a) Of the above claim(s) 31-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 6/9/99. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

Specification

2. The abstract of the disclosure is objected to because it should not compare the invention with prior art, and it should be within the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 21-30 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 6 of copending Application No. 09/588,002. Although the conflicting claims are not identical, they are not patentably distinct from each other because the application's claims merely broaden the scope of the copending Application No. 09/588,002 claims by not claiming some elements.

The following is the comparison between the patented claims and the claims in the instant application. The copending Application No. 09/588,002 claims the following limitations: 1. A communication apparatus which: is connected with a network comprising: (i) lower-layer apparatuses which are connected with communication lines of a lower layer and communication lines of an upper layer apparatus having means for line switching in the lower layer; and (ii) upper-layer apparatuses which are connected with the communication lines of the upper layer and have means for line switching in the upper layer; wherein said lower-layer apparatus transmits a switching-inhibit signal to the upper-layer apparatuses when said lower-layer apparatus has detected a line failure; in a lower or upper layer communication line identifies one or more faulty lines of the lower or the upper layer and locates the site of occurrence of failure by using failure information collected on the lower and upper-layer communication lines- ,cancels the switching-inhibit signal to the upper-layer apparatuses when no lower-layer

communication line has been found faulty but man upper-layer communication line has been found fault,; determines, by using failure information concerning the lower and upper-layer communication lines, which line switching means of the lower and upper-layer apparatuses should perform switching in order to secure a largest number of normal upper-layer communication lines, or in order to restore high-priority lines rather than low-priority lines, or in order to secure a largest number of signal channels, in case that any of the lower-layer communication lines has been found faulty; and has means for causing line switching in the lower layer first and then canceling the switching-inhibit signal to the upper-layer apparatuses when switching is to take place in both the lower and upper layers in accordance with said determination; 4.A communication system comprising: a plurality of lower-layer apparatuses;- and a plurality of upper-layer apparatuses which belong to a layer which is upper than a layer to which the lower-layer apparatuses belong, wherein each apparatus has line-switching means;., wherein connected between the lower-layer apparatuses are lower-layer communication lines, each lower-layer communication line being multiplexed to accommodate one or more upper-layer communication lines, and connected between the upper-layer apparatuses are upper-layer communication lines going through the lower-layer apparatuses, a switching-inhibit signal is transmitted to the upper-layer apparatuses when any of the lower-layer apparatuses has detected line failure, on said lower and upper layer communication lines, one or more faulty lines of the lower or the upper layer are identified and the site of occurrence of failure is located based on failure information on the lower and upper-layer communication lines;., the switching-inhibit signal to the upper-layer apparatuses is cancelled when no lower-layer communication line has been found faulty but any upper layer communication line has been found faulty;: whether

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switching means of the lower and upper-layer apparatuses should perform switching is determined, based on failure information on the lower and upper-layer communication lines, in order to secure a largest number of normal upper-layer communication lines, or in order to restore high-priority lines rather than low-priority lines, or in order to secure a largest number of signal channels, any of the lower-layer communication lines has been found faulty; and first means for causing line switching in the lower layer first and then canceling the switching-inhibit signal to the upper-layer apparatuses, when switching is to take place in both the lower and upper layers in accordance, with said determination. 6. A communication system comprising: a plurality of lower-layer apparatuses. a plurality of upper-layer apparatuses which to a layer which is upper than a layer to which the lower-layer apparatus belong, wherein each apparatus has line switching means wherein connected between the lower-layer apparatuses are lower-layer communication lines, each lower-layer communication line being multiplexed to accommodate one or more upper-layer communication lines, and connected between the upper-layer apparatuses are upper-layer communication lines going through the lower-layer apparatuses;., a switching-inhibit signal is transmitted to the upper-layer apparatuses when any of the lower-layer apparatuses has detected a line failure;., on said lower and upper layer communication lines, one or more faulty lines of the lower or the upper layer are identified and the site of occurrence of failure is located based on failure information on the lower and upper-layer communication lines;., and the switching-inhibit signal to the upper-layer apparatuses is cancelled when no lower-layer communication line has been found faulty but any of the upper-layer communication lines has been found faulty; and first means for determining, based on failure information on the lower and upper-layer communication lines, which line-switching means of the lower- and

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upper-layer apparatuses should perform switching in order to secure a largest number of normal upper-layer communication lines, or in order to restore high-priority lines rather than low-priority lines, or in order to secure a largest number of signal channels, in case that any of the lower-layer communication lines has been found faulty.

The instant application claims the following limitations: 21. A communication apparatus connectable to a network, comprising: (i) lower-layer apparatuses which are connected with communication lines of a lower layer and communication lines of an upper layer and have means for line switching in the lower layer; and (ii) upper-layer apparatuses which are connected with the communication lines of the upper layer and have means for line switching in the upper layer, wherein said communication apparatus detects line failure and coordinates line switching by the line-switching means of the lower and upper-layer apparatuses by using failure information on the lower and upper-layer communication lines. 22. A communication apparatus according to claim 21, wherein each lower-layer apparatus has a coordinated-switching device of a coordinated-switching function or is connected with coordinated-switching means through an interface. 23. A communication apparatus according to claim 21, further comprising: a switching mode that causes the line-switching means of the upper-layer apparatuses to begin switching when the line switching means of the lower-layer apparatuses have finished switching. 24. A communication apparatus connectable to a network, comprising: (i) lower-layer apparatuses which are connected with communication lines of a lower layer and communication lines of an upper layer and have means for line switching in the lower layer; (ii) upper-layer apparatuses which are connected with the communication lines of the upper layer and have means for line switching in the upper layer; and means for detecting line failure and determining

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the order of switching by the switching means of the lower and upper-layer apparatuses by using failure information on the lower and upper-layer communication lines, and restoring faulty communication lines. 25. A communication apparatus according to claim 24, wherein said means of the lower-layer apparatuses has a coordinated-switching device or a coordinated-switching function or is connected with coordinated-switching means through an interface. 26. A communication apparatus connectable to a network, comprising: (i) lower-layer apparatuses which are connected with communication lines of a lower layer and communication lines of an upper layer and have means for line switching in the lower layer; (ii) upper-layer apparatuses which are connected with the communication lines of the upper layer and have means for line switching in the upper layer; means for detecting line failure and collects failure information on the lower and upper-layer communication lines, identifying one or more faulty lines of the lower or the upper layer and locates the site of occurrence of failure by using the collected failure information, and identifying, by using the information on the faulty communication lines and the site of occurrence of failure, lower and upper-layer apparatuses which are required to make line switching in order to restore the faulty communication lines; and means for determining the order and the timing of line switching by the line-switching means of the identified lower and upper-layer apparatuses. 27. A communication apparatus according to claim 26, wherein said means in the lower-layer apparatuses has a coordinated-switching device or a coordinated-switching function or is connected with coordinated-switching means through an interface. 28. A communication apparatus connectable to a network, comprising: (i) lower-layer apparatuses which are connected with communication lines of a lower layer and communication lines of an upper layer and have means for line switching in the lower layer;

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(ii) upper-layer apparatuses which are connected with the communication lines of the upper layer and have means for line switching in the upper layer; and means for transmitting a switching-inhibit signal to the upper layer apparatuses when any lower-layer apparatus has detected line failure, identifying faulty lines of the lower and upper layers and locates the site of occurrence of failure by using failure information collected on the lower and upper layer communication lines; and coordinates line switching by the lower- and upper layer apparatuses by using said collected failure information on the lower and upper-layer communication lines. 29. A communication apparatus according to claim 28, wherein when the lower-layer apparatuses have detected line failure, a switching inhibit signal is transmitted to the upper-layer apparatuses first and then the failure detection is notified to them. 30. A communication apparatus according to claim 28, wherein each lower-layer apparatus has a coordinated-switching device or a coordinated-switching function or is connected with coordinated-switching means through an interface.

The following elements are recited in the patent claims but not in the instant application: in order to secure a largest number of normal upper-layer communication lines, or in order to restore high-priority lines rather than low-priority lines, or in order to secure a largest number of signal channels, in case that any of the lower-layer communication lines has been found faulty; and has means for causing line switching in the lower layer first and then canceling the switching-inhibit signal to the upper-layer apparatuses when switching is to take place in both the lower and upper layers in accordance with said determination. The application's claims are nearly identical in every other respect to the patent claims. Therefore, the application's claims are simply broader version of the copending Application No. 09/588,002 claims. It is the examiner's position that broadening the copending Application No. 09/588,002 claims by not claiming the above

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elements of the copending Application No. 09/588,002 claims would have been obvious to one of the ordinary skill in the art in view of the copending Application No. 09/588,002 claims. It is important to note that the instant application is a continuation of the copending Application No. 09/588,002 used herein as the basis for the obviousness type of double patenting rejection. The application is attempting to broaden the parent application's claims by eliminating some the claimed elements in the continuation at issue here.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 21-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishibashi et al. (US 5,663,949).

Ishibashi et al. discloses a line protection switching system comprising the following features: regarding claim 21, a communication apparatus connectable to a network, comprising: (i) lower-layer apparatuses (Switch 1 on the left depicted in Fig. 26, and block 3 in Fig. 1) which are connected with communication lines (103 depicted in Figs. 26, 27) of a lower layer and communication lines (103 depicted in Figs. 26, 27) of an upper layer and have means for line switching in the lower layer; and (ii) upper-layer apparatuses (Switch 1 on the right depicted in

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Fig. 26, and block 3 in Fig. 1) which are connected with the communication lines (103 depicted in Figs. 26, 27) of the upper layer and have means for line switching in the upper layer, wherein said communication apparatus detects line failure (Fault Monitor 207 in Fig. 3) and coordinates line switching (Fiber Interface Card 20, 21 in Figs. 1, and 5) by the line-switching means of the lower and upper-layer apparatuses (Switch 1 on the right depicted in Fig. 26, and block 3 in Fig. 1) by using failure information on the lower and upper-layer communication lines (103 depicted in Figs. 26, 27); regarding claim 22, wherein each lower-layer apparatus (left Switch 1 in Fig. 26 and block 3 in Fig. 1) has a coordinated-switching device of a coordinated-switching function or is connected with coordinated-switching means through an interface; regarding claim 23, a switching mode (Fig. 13) that causes the line-switching means of the upper-layer apparatuses (Switch 1 on the right depicted in Fig. 26, and block 3 in Fig. 1) to begin switching when the line switching means of the lower-layer apparatuses (Switch 1 on the left depicted in Fig. 26, and block 3 in Fig. 1) have finished switching; regarding claim 24, a communication apparatus connectable to a network, comprising: (i) lower-layer apparatuses (Switch 1 on the left depicted in Fig. 26, and block 3 in Fig. 1) which are connected with communication lines (103 depicted in Figs. 26, 27) of a lower layer and communication lines (103 depicted in Figs. 26, 27) of an upper layer and have means for line switching in the lower layer; (ii) upper-layer apparatuses (Switch 1 on the right depicted in Fig. 26, and block 3 in Fig. 1) which are connected with the communication lines (103 depicted in Figs. 26, 27) of the upper layer and have means for line switching in the upper layer; and means for detecting line failure (Fault Monitor 207 in Fig. 3) and determining the order of switching (Fiber Interface Card 20, 21 in Figs. 1, and 5) by the switching means of the lower and upper-layer apparatuses (Switch 1 on the right depicted in Fig.

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26, and block 3 in Fig. 1) by using failure information on the lower and upper-layer communication lines (103 depicted in Figs. 26, 27), and restoring faulty communication lines (103 depicted in Figs. 26, 27); regarding claim 25, wherein said means of the lower-layer apparatuses (Switch 1 on the left depicted in Fig. 26, and block 3 in Fig. 1) has a coordinated-switching device or a coordinated-switching function (Fiber Interface Card 20, 21 in Figs. 1, and 5) or is connected with coordinated-switching means through an interface; regarding claim 26, a communication apparatus connectable to a network, comprising: (i) lower-layer apparatuses (Switch 1 on the left depicted in Fig. 26, and block 3 in Fig. 1) which are connected with communication lines (103 depicted in Figs. 26, 27) of a lower layer and communication lines (103 depicted in Figs. 26, 27) of an upper layer and have means for line switching in the lower layer; (ii) upper-layer apparatuses (Switch 1 on the right depicted in Fig. 26, and block 3 in Fig. 1) which are connected with the communication lines (103 depicted in Figs. 26, 27) of the upper layer and have means for line switching (Fiber Interface Card 20, 21 in Figs. 1, and 5) in the upper layer; means for detecting line failure and collects failure information on the lower and upper-layer communication lines (103 depicted in Figs. 26, 27), identifying one or more faulty lines of the lower or the upper layer and locates the site of occurrence of failure by using the collected failure information, and identifying, by using the information on the faulty communication lines (103 depicted in Figs. 26, 27) and the site of occurrence of failure, lower and upper-layer apparatuses (Switch 1 on the right depicted in Fig. 26, and block 3 in Fig. 1) which are required to make line switching in order to restore the faulty communication lines (103 depicted in Figs. 26, 27); and means for determining (Fiber Interface Card 20, 21 in Figs. 1, and 5) the order and the timing of line switching by the line-switching means of the identified lower

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and upper-layer apparatuses (Switch 1 on the right depicted in Fig. 26, and block 3 in Fig. 1); regarding claim 27, wherein said means in the lower-layer apparatuses (Switch 1 on the left depicted in Fig. 26, and block 3 in Fig. 1) has a coordinated-switching device (Fiber Interface Card 20, 21 in Figs. 1, and 5) or a coordinated-switching function or is connected with coordinated-switching means through an interface; regarding claim 28, a communication apparatus connectable to a network, comprising: (i) lower-layer apparatuses (Switch 1 on the left depicted in Fig. 26, and block 3 in Fig. 1) which are connected with communication lines (103 depicted in Figs. 26, 27) of a lower layer and communication lines (103 depicted in Figs. 26, 27) of an upper layer and have means for line switching in the lower layer; (ii) upper-layer apparatuses (Switch 1 on the right depicted in Fig. 26, and block 3 in Fig. 1) which are connected with the communication lines (103 depicted in Figs. 26, 27) of the upper layer and have means for line switching in the upper layer; and means for transmitting a switching inhibit signal (APS control signal 210 in Fig. 1) to the upper layer apparatuses when any lower-layer apparatus (left Switch 1 in Fig. 26 and block 3 in Fig. 1) has detected line failure, identifying faulty lines (Fault Monitor 207 in Fig. 3) of the lower and upper layers and locates the site of occurrence of failure by using failure information collected on the lower and upper layer communication lines (103 depicted in Figs. 26, 27); and coordinates line switching (Fiber Interface Card 20, 21 in Figs. 1, and 5) by the lower- and upper layer apparatuses by using said collected failure information on the lower and upper-layer communication lines (103 depicted in Figs. 26, 27); regarding claim 29, wherein when the lower-layer apparatuses (Switch 1 on the left depicted in Fig. 26, and block 3 in Fig. 1) have detected line failure (Fault Monitor 207 in Fig. 3), a switching inhibit signal (APS control signal 210 in Fig. 1) is transmitted to the upper-layer apparatuses (Switch 1 on the

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right depicted in Fig. 26, and block 3 in Fig. 1) first and then the failure detection is notified to them; regarding claim 30, wherein each lower-layer apparatus (left Switch 1 in Fig. 26 and block 3 in Fig. 1) has a coordinated-switching device (Fiber Interface Card 20, 21 in Figs 1, and 5) or a coordinated-switching function or is connected with coordinated-switching means through an interface. See column 5, line 53 to column 8, line 38; column 9, line 61 to column 10, line 64; column 13, line 46 to column 15, line 19.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Azuma et al. (US 6,430,150) discloses a communication network.

Chaudhuri (US 6,324,162) discloses a path-based restoration mesh networks.

Tomizawa et al. (US 6,202,082) discloses a trunk transmission network.

Slominski et al. (US 5,581,689) discloses a self-healing system.

Nishimura et al. (US 5,235,599) discloses a self-healing network.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang B. Yao whose telephone number is 703-308-7583. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KWANG BIN YAO
PRIMARY EXAMINER



Kwang B. Yao
June 28, 2004